SELIDOSEMA PLUMARIA, SCHIFF., R. TYRONENSIS.

By E. A. Cockayne, D.M., F.R.C.P.

In a bog near Lough Neagh, Co. Tyrone, Northern Ireland, a race of *Selidosema plumaria* used to occur, which Mr Thomas Greer thinks is worthy of a name. The bog was similar to a moss near Witherslack and was the home of *Coenonympha tullia*, *Euphydryas aurinia*, and other interesting species, but it exists no longer, and the insects which used to frequent it have disappeared.

Selidosema plumaria, Schiff., r. **tyronensis,** r. nov.

The race is characterized by its small size, the length of the forewing varying from 15 to 17 mm., compared with a length of 19 to 21 mm. usual in specimens from the New Forest. The dark marginal area is narrower than it is in English examples, and the darker median shade is much fainter in both sexes. Dark speckles are present on the ground colour of many specimens, and in some the speckling is dense.

Type: ♂, Dylonghan, near Lough Neagh, Co. Tyrone, 31.vii.1940, Thomas Greer.

Allotype: ♀, same data.

Paratype: ♂, near Lough Neagh, Co. Tyrone, 1.viii.1918, Thomas Greer.

Barrett figures the form, Pl. 286, 2 b ♂, and 2 c ♀.

In the same bog ab. *fumosa*, Greer, and ab. *intermedia-fumosa*, Turner, were taken. Both these are mosaics; in *fumosa* most of the surface is melanic and only small streaks and pale ground colour remain, whereas in *intermedia-fumosa* there are streaks and patches of melanic colour on the pale ground. It is probable that both are determined by the same gene. They are comparable with *Ectropis crepuscularia*, Hb., ab. *varia*, Cockayne, of which some examples are almost completely melanic and others show large areas of the normal pale ground colour.

Mr Greer has most generously presented the type, allotype, and paratype of r. *tyronensis* and the type of ab. *fumosa* to the British Museum for incorporation in the Rothschild-Cockayne-Kettlewell collection of British Lepidoptera.

MIDDLE EAST LEPIDOPTERA, IX: TWO NEW FORMS OR SPECIES AND THIRTY-FIVE NEW RECORDS FROM CYPRUS.

By E. P. Wiltshire, F.R.E.S.

My recent visit to Cyprus, where I spent March to May 1947 at Kyrenia on the North Coast, shows that, although the fauna of the island is already fairly well known, there is still much to discover and report. The completest list that has been published is that of Rebel (1939) (*Mitt. der Muench. Ent. Ges. J.*, XXIX, Heft 4), enumerating 482 species, including Micros. The present article, dealing only with Macro-Lepidoptera, consists of two parts: the first, an annotated list of 35 species not hitherto recorded or at least not enumerated by Rebel, including descriptions of two that are new to science; and the second

consisting of some general remarks followed by notes on species mentioned by Rebel, where there was something to add or criticise.

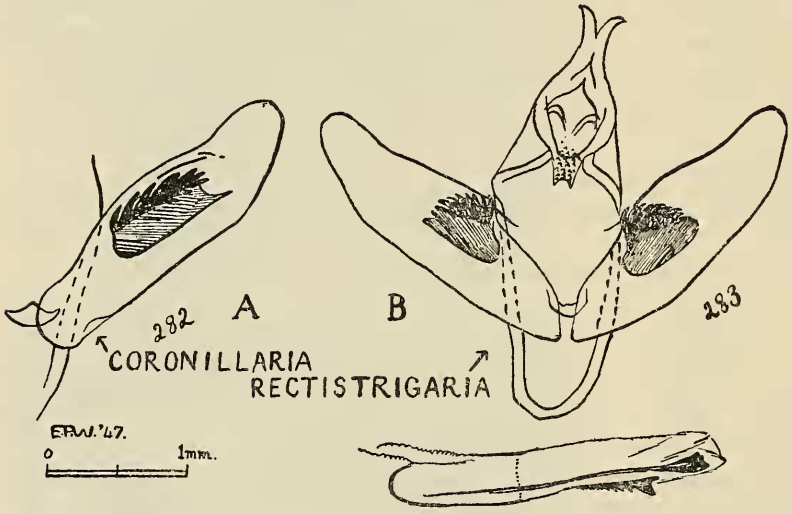
I am indebted to Messrs Charles Boursin, R. J. Collins, E. B. Ford, W. Forster, G. Warnecke, E. Wehrli, and Francis Hemming for assistance on various problems; and to Messrs Dray & Waring and Mrs Dray for their hospitality in Cyprus in the neighbourhood of Kyrenia.

PART I: NEW RECORDS FOR CYPRUS.

Cochlidiidae.

1. *Cochlidion creticum* Rebel, **drayi** subsp. n. (or sp. n. ?).

♂, Palp, head, thorax, antenna, feet and forewing, orange-brown. Tip of palp, paler. A white tuft at base of antenna. Thorax robuster than *limacodes*, Hufn. Forewing, glossy, unmarked. Fringes, dark grey distally. Underside of forewing, matt



Male genitalia, ventral open view, with aedeagus separated of:
Fig. A—*Pseudoterpna coronillaria*, Hübner (right valve only).
Fig. B—*Pseudoterpna* **rectistrigaria** b. sp.

orange-brown, fringes as on upperside. Hindwing, smoky grey-brown, yellow towards costa; termen, paler pinkish. Fringes, grey, blackish at anal angle. Hindwing underside, paler than forewing, more orange on costa.

Span: 26 mm.

Holotype: ♂, 13.5.47; Paratype, ♂, 18.5.47, Kyrenia, Cyprus (in coll. m.).

The species is to be obtained at light among thickets of *Quercus coccifera*. This tree, having been almost exterminated by the Cyprians, is extraordinarily local; consequently this moth, which has not been noticed among the more luxuriant, more widespread and better-worked stands of the Cyprian oak (*Q. alnifolia*) on the South Cyprian Mountains, is also very local. I name it in honour of Mr Dray, whose private nature-reserve, on the coast one mile west of Kyrenia, allowed this tree to thrive again and the moth to survive. It is less pale, more warmly coloured than *creticum*, Rebel, and perhaps specifically distinct; it is larger, robuster and plainer than *limacodes*, Hufn.

LYMANTRIIDAE.

2. *Ocneria terebinthi*, Freyer.
Coast and hills, *Pistacietum lentisci* scrub, v.
3. *Lymantria dispar*, L.
One male only, on coast, flying by day, 29.v.

AGROTIDAE.

4. *Agrotis forficula*, Ev., f. *hadjina*, Stgr.
Wooded hills, c. 750 ft., 22.iv. Common on one night.
5. *Cucullia verbasci*, L.
Larvae on *Celsia arcturus*, c. 1000 ft., iii.-iv. (See *Ent. Rec.*, LIX, p. 94, for further details.) Adults emerged, ii, iii.48.
6. *Cucullia barthae*, Boursin.
Larvae on *Scrophularia sphaerocarpa*, c. 2000 ft., iv-v.
7. *Amephana aurita*, J.
Coast and hills, iii, iv, v.
8. *Calocampa exsoleta*, L.
One larva found on 10.iv on low plants in a dried-up swamp at Dhikomo, near Kyrenia, but south of the chain, by Mr C. C. Mountfort.
9. *Dryobota furva*, Esp.
Larvae beaten in iv from *Quercus coccifera*, one mile west of Kyrenia.
10. *Antitype anceps*, Stgr.
(On a previous visit to Kyrenia, 1933) To sugar, 18.xii.
11. *Spudaea ruticilla*, Esp.
Larvae beaten in iv from *Quercus coccifera* in numbers, one mile west of Kyrenia.
12. *Autophila dilucida*, Hübn.
Coast and hills, v. (N.B.—Three species of this genus inhabit Cyprus. The other two, recorded by Rebel, but wrongly named by him, are mentioned in Part II.)
13. *Parastichtis monoglypha syriaca*, Ost.
One, on coast, 19.iv.
14. *Porphyrinia ragusana*, Freyer.
One, wooded hills, c. 750 ft., 22.iv.
15. *Catocala* (*Ephesia*) *eutychea*, Treitschke.
Larvae on *Quercus coccifera* (see above under *Cochlidiidae*) in iii, iv; adults in iv, v. (Accompanied here, on the coast, by *Catocala nymphagoga*, Esp., which, however, is also known from the South Cyprian Mountains.)
16. *Pericyma albidentaria*, Freyer.
One, on coast, 2.v.
17. *Phytometra circumscripta*, Freyer.
One, on coast, 25.iii.

GEOMETRIDAE.

18. *Pseudoterpna rectistrigaria*, **bona species** (nec. ab.).
Two distinct species of this genus inhabit Cyprus; Rebel (1939) named them both but treated them as one. The new species, apparently endemic, is obviously distinct without dissection (see Rebel's plate, fig. 12 of Pl. XV, *loc. cit. supr.*), but I show here

the difference in male genitalia (figs. A and B). During my three months in N. Cyprus I took only one *coronillaria*, Hb., over twenty *rectistrigaria*. They both inhabited wooded hillsides at 750-1000 ft., flying in iv, v.

19. *Comibaena neriaria*, H.S.
Coast, v.

20. *Xenochlorodes olympiaria*, H.S.
Rebel has overlooked Prout's mention in Seitz, IV, Suppt. I took it in the Kyrenia vicinity on the coast and up to 1000 ft. in iv and v, but it was most numerous in mid iv in the hills.

21. *Scopula flaccidaria*, Z.
One only, 25.iii, coast.

22. *Sterrha consanguinaria*, Led.
Coast and hills, v.

23. *Sterrha circuitaria*, Hübn.
Coast and hills, v.

24. *Oulobophora externata*, H.S.
Scrub (*Pistacietum lentisci*) near coast, iii.

25. *Cidaria* (*Euphyia*) *permixtaria*, H.S.
Wooded hills, 750 ft. One only, 9.v.

26. *Cidaria* (*Euphyia*) *corollaria*, H.S.
Wooded hills, 750-1000 ft., iv, two only.

27. *Cidaria* (*Coenotephria*) *achromaria*, Lah.
Coast and hills, iii, iv, v.

28. *Eupithecia quercetica*, Prout.
Coast and hills, iii.

29. *Eupithecia dodonaeata*, Guen.
One male, at flowers of *Pistacia lentiscus*, coast, 6.iv, the genitalia agreeing perfectly with Pierce's figure of *dodonaeata*.

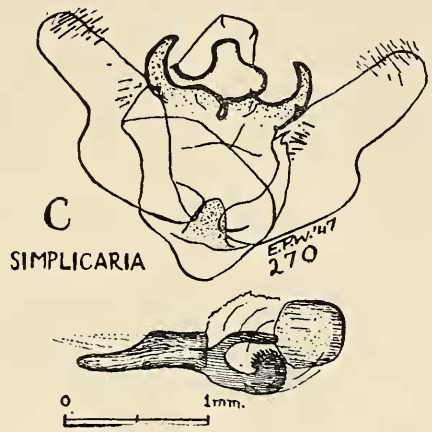
30. *Eupithecia* (?) *dubiosa*, Dietze.
One male, at flowers of *Pistacia lentiscus*, coast, 23.iii, the genitalia being close to but distinct from the preceding species, particularly in the aedeagus-cornuti. Probably a female adult belongs here also, which hatched on 6.iv.48 from Pug-larvae found on *Quercus coccifera*. Its genitalia are not like those shown by Pierce for *dodonaeata*; the forewing was unlike those of the male, being nearly unicolorous, dark, with a pale marginal line, i.e. very like *massiliata* but with a narrow linear, not round, cell-spot. There are thus three, perhaps four, univoltine vernal *Eupithecia* species, inhabiting the same habitat.

31. *Macaria aestimaria*, Hübn.
Two species of this genus inhabit Cyprus; both are named in Rebel (1939) but they are treated as one; it appears that only *syriacaria*, Stgr., has been taken in the island previously. (For the difference in biology between the two, see Wiltshire (1939), *Mitt. der Muench. Ent. Ges. J.*, XXIX, Heft 1, the third in my series of "Early Stages"). I found *aestimaria* rather rare in stream-beds near the coast in iii and iv; doubtless it occurs in its haunts later too.

32. *Rhoptria asperaria*, Hübn.
Coast and hills, iii, iv, v.

33. *Crocallis tusciaria*, Borkh.
(On a previous visit to Kyrenia, 1933) Coast, xii. Larvae in iv, v, on *Calycotome villosa*, *Genista sphacelata*, etc., hills.

34. *Hemerophila* **trypanaria**, sp. n.
♀, Antenna, serrate; thorax, rosy grey-brown and blackish; abdomen, blackish-brown. Forewing, grey-brown, paler at apex, rosier



Male genitalia, ventral open view, with aedeagus separated of:
Fig. C—*Dyscia simplicaria*, Rebel.

on median area, with blackish lines and shades; ante- and post-median lines run parallel and wide apart more or less as in *abruptaria* but latter is angled near apex as in *berenicidaria* Turati (see fig. 35, Pl. IV, *Atti. Soc. Ital. Sc. Naturali*, XLIII, for this species and the Italian form of *abruptaria*, etc.). Hindwing, grey-brown, marked with blackish lines and shades, paler at anal angle and termen; the post-median line is bent on v.5 as in some Asiatic species (e.g. *emaria*, Seitz, IV, pl. 20 b); this distinguishes it from all other European and N. African species of the genus. The coloration approaches that of *berenicidaria*, Tur., but the pale areas are not quite so white as in Turati's plate just referred to. Termen, a fine clear blackish wavy line, as in *berenicidaria*, not obsolete as in *abruptaria*. For further details of upperside see photo (Plate 3, Fig. 3). Underside, paler brownish-grey; the two cell-spots and post-median lines, indicated in grey-black; the post-median line is more strongly marked on the hindwing and is not angled as on upperside, reaching the costa at a different point. This line is dentate on the nervures on both wings.

Span: 36 mm.

Holotype: ♀, 7.v.47, c. 750 ft., Kyrenia Mountains, N. Cyprus (in coll. m.).

The name *trypanaria* is intended to recall the Trypanian Limestone of the N. Cyprian chain and of Mt. Trypao-Voun, at whose foot the type was taken.

35. *Aspilates ochrearia*, Rossi.
Coast, very common, iii and early iv.

36. *Mannia oppositaria syriaca*, Prout.
Larvae on lichens on cypress-trees at 2800 ft., v; hatched vi. (N.B.—The specimen was at first mistaken for *Tephronia sepiaria*

reported by Rebel from Cyprus, but the hind-tibiae make this impossible. The venation agrees with what Prout says in Seitz, IV, about *oppositaria*.)

PART II: OTHER NOTES ON CYPRIAN LEPIDOPTERA.

A. General Notes.

Twice in Part I of this article reference was made to an earlier visit to Cyprus; this was a very short Christmas visit to Kyrenia in 1933. My second visit, when most of the discoveries and observations were made, was in spring 1947. An autumn visit would, I think, have produced further discoveries, though I consider I covered the optimum season at Kyrenia for insects as a whole.

The ecology of these insects can be quickly summarised, for my entomological work was done entirely in a single vicinity, that of Kyrenia on the North Coast. Country worked consisted of coastal plain and mountains to a maximum height of 3000 ft. All the localities visited were primarily one and the same biotope; present differences are due to secondary causes, principally cultivation, grazing and deforestation. A small radius only was worked, and all specimens could be labelled either "Kyrenia" or "Kyrenia Mountains." Very little of the primary scrub (maquis) is left intact on the plain; but where it survives, as on Mr Dray's small estate, the fauna is very much the same as on the hills, though certain species are missing. There is almost no perennial fresh water except the trickles almost immediately absorbed by irrigation; the one or two characteristic oasis moths and trees that I found were very local, clustering around small springs where shallow valleys debouched on the beach (e.g., *Leucania deserticola*, *Scopula flaccidaria*, *Macaria aestimaria* and *Phragmites*, *Typha*, and Tamarisk). This eco-fauna was scanty, so on the whole the fauna of the region was very homogeneous, viz., a fauna of the xerophilous Mediterranean scrub.[1]

The additions to Rebel's list detailed in Part I do not alter the general zoogeographical picture as given by Rebel (1939), but merely necessitate certain changes of detail. The island fauna is evidently an impoverished East Mediterranean fauna: impoverished through isolation, just as the fauna of the British Isles has been, compared with that of the adjacent mainland. Cyprus is, however, richer in endemic species than the British Isles, perhaps because it was never extensively glaciated, and has been isolated longer.

The following species, regarded as endemics by Rebel, are now known to occur elsewhere too, and so should be deleted from the endemic list: *Agrotis hemispherica*, Hamps. (=*Euxoa temera*, see [2]*Boursin*, XXIII, 1940); *Amathes pulverea*, Hamps. (see [3]Boursin, XXV, 1940); *Thaumetopoea wilkinsoni*, Tams, which also inhabits Syria; and perhaps others. On the other hand, the new species *Pseudoterpna rectistrigaria* and *Hemerophila trypanaria* (see Part I) can be added to the endemics; perhaps too the new and interesting *Cochlidion*, if distinct from *creticum*. Most of my additions to the Cyprian list are widespread Mediterranean or East Mediterranean species.

[1]For further ecological and botanical details see Jens Holmboe (Bergen, 1914), "Studies on the Vegetation of Cyprus."

[2]*Mitt. der Muench. Ent. Ges.*, *30*, Heft 2, p. 540.

[3]*Revue Francaise d'Entomologie*. VII. Fasc. 1 (pp. 86-92, Plates III and IV).

The two families which Rebel thought absent from the island (*Lymantriidae, Cochlidiidae*) are now proved to be represented there (Part I). On the other hand it can be confirmed that the Burnets (genus *Zygaena*) are definitely and inexplicably absent. Nor did I discover any of Lederer's reputed Cyprian species which have never been retaken since Zach's visit in 1853.

I am tempted to embark on but must here refrain from lengthier zoogeographical discussions, which had better appear separately.

Rebel, in a list compiled from all parts of the island caught by numerous entomologists over many years, enumerates 286 different species of the families *Papilionidae* to *Zygaenidae*. For the same families, working only one district within a five-mile radius and up to a maximum height of 3000 ft., for three months only, I noted 154 (121 of Rebel's species plus the thirty-three enumerated in Part I). Many more *Agrotidae* would have certainly been noted had I worked the same district in autumn. The Northern Range and coastal plain is thus seen to be a rich district, considering its low elevation. Many species only known before from S.W. Cyprus occur there too. Certain species, however, are confined to the heights and woods of the mountains of the southwest; whether any of my additions are really confined to the north remains to be seen.

B. Notes on Individual Species.

The numbers hereunder are those of Rebel's list:—

1. *P. machaon.*
   Larvae noted on small roadside umbellifers in v (?*Pimpinella cretica*). Adults numerous.
2. *T. cerysyi cypria.*
   On coast at Dray's, commoner on mountains.
4. *P. brassicae.*
   Hitherto unrecorded foodplant: *Capparis spinosa* (for details, see my note in *Ent. Rec.*, LIX, p. 94).
9. *A. cardamines phoenissa.*
   Males very common, coast and hills, iii and iv.
21. *Hipparchia syriaca cypriaca*, Stgr. (see Plate, Fig. 4).
   Common under *Ceratonia* trees in plain in v. The photo shows a remarkable assymmetrical variety, which Dr E. B. Ford considers a good example of homoeosis. The right wings are normally marked; they appear in the photo on the left, since the underside is illustrated. The underside of the left hindwing is strikingly abnormal; that of the left forewing is less abnormal, but the absence of the pale fascia near the tornus makes it assymmetrical too. On the upperside, the left hindwing is uniformly sooty-black, and lacks the diffuse pale fascia on the right hindwing. This uniform blackness can occur symmetrically in the Cyprus race. There is also a slight kink in the middle of the outer margin of the left forewing.
28. *P. roxelana.*
   Fairly common in the plain, especially haunting small gullies with grassy tops, and also fond of tree foliage. For the Early stages, previously unknown, see my article in *Ent. Rec.*, LX, January 1948, and Plate V, Fig. 13, *id.*, LIX, October 1947.

42. *T. balcanicus.*
Foodplant: *Paliurus australis.* Not seen until late v. Larvae were noted too, with attendant ants milking them, thus confirming the observation made at Basra (*Ent. Rec.*, *56*, pp. 111, 112, and Plate IV, Fig. g).

46. *Philotes astabene*, Hemming (=*clara*, Stgr. praeocc.).
(Rebel, as "*baton schiffermulleri.*") The genitalia show that the Cyprian *Philotes* is not *baton*. Hemming, *in litt.*, told me that the Cyprian form was *Philotes vicrama*, Moore, subsp. *astabene*, Hemming, and that *schiffermulleri* is the European form of the same species *vicrama*. However, Dr W. Forster considers *clara* (i.e. *astabene*) distinct from *vicrama*. Who is right, I do not know. I took both forms (*i.e. schiffermulleri* and *astabene*) together, in iii and iv in the maquis, plain and hills, not very commonly; the male genitalia of the two forms were identical. They agreed with Dr Forster's photo of "*clara*" genitalia. At least I presume it is correct to say that I took the two forms named above: I certainly took two forms of male, one (in the majority) a dark blue, the other a pale glossy grey.

50. *Glaucopsyche paphos*, Chapman.
Is not, as Rebel says, a mountain species, but a maquis species. Where this scrub survives, as on Dray's, the butterfly occurs in the plain, right up to the edge of the sea. I associate it with *Genista sphacelata*, but was unable to prove this to be the foodplant.

54. *Pelopidas borbonica*, Boisd., subsp. *zelleri*, Led.
Is the right name for this skipper; a Tropical species with a Mediterranean race better known in Europe than the African.

67. *Thaumetopoea solitaria.*
I did not find this, nor any other of the species said by Lederer to have been taken by Zach. Zach's claim to have found larvae of *solitaria* on cypress makes me inclined to think that he has confused this and many other species and that all Lederer's unconfirmed records are doubtful, the specimens perhaps really coming from Syria.

79 & 80. *Amathes palaestinensis*, Kalchb. and *pulverea*, Hamps.
For the latter, see my remarks on endemics above under A. Whether the former occurs is at present doubtful; since Rebel did not examine the genitalia of the species he records it is impossible to say whether the second species of the group, after *pulverea*, in Cyprus is *xanthographa*, Schiff., or *palaestinensis*, Kalch.

84. Should be *Euxoa temera*, Hübn.

119. *Meganephria oxyacanthae* subsp. *benedictina*, Stgr.
Though doubtless closest to *benedictina*, the Kyrenia form, of which I took several examples in 1933 in xii at sugar, is smaller and paler than the mainland form. Some other name may therefore be necessary to designate the Cyprian race but I leave this open for the present.

127. *L. putrescens.*
Is not, as Rebel says, only West Mediterranean but East Mediterranean and, indeed, S.W. Persian! Its occurrence therefore in Cyprus need not be queried. Some larvae which I found but failed to rear were probably this species. I also took No. 126, *L. deserticola*, Bart., near Kyrenia.

187. The correct name for the species called by Rebel *Apopestes cataphanes ligaminosa* is, on the contrary, *Autophila anaphanes*, Boursin, subsp. *cypriaca*, Boursin. I took one male in v at c. 750 ft. in fairly wooded hill country.

188. The correct name for the Cyprian species called by Rebel *Apopestes limbata* is *Autophila luxuriosa*, Zerny, subsp. *cyprogena*, Boursin. I took several in v at c. 750-1000 ft.

234. *Chesias rhegmatica*, Prout.
Four, at 750 ft., near the "Forest Hut," in iii. Possible foodplant:—*Calycotome villosa*.

257. *Boarmia correptaria*, Z.
Albers has shown (in *Zeit. d. Wiener Ent. Ver.*, *25*, pp. 65 ff. 1940) that *correptaria* is specifically distinct from *perversaria*, Boisd. It is wrong therefore, as Rebel does, to make it a race thereof. The male genitalia of my Cyprian *correptaria* agree with Albers' figure of *correptaria* (1941, fig. 20, *Mitt. Muench. Ent. Ges.*, XXXI, H. 3, p. 978). At c. 750 ft. in iii and iv.

265. *Dyscia simplicaria*, Rebel (1939).
The holotype of this species, rightly diagnosed by Rebel as new, was a poor specimen unusually pale and small. It needs redescribing:—♂ antenna, bipectinate throughout. Forewing and hindwing of both sexes, when fresh, lilac-grey, with ochreous-brown tinted median field, and usually a strong but ill defined median shade from the inner margin to below the cell-spot. Ante-median and post-median fasciae, defined in black continuously near the costa, and by dots on nervures 1 and 2 in the former and on nervures 1-6 in the latter; the former is sometimes obsolete, though the costal marks are nearly always present, i.e. the black dots on nervures 1 and 2 are more often missing; the latter fascia is accompanied by a distal white shade, on both wings; the former fascia is quite obsolete on the hindwing. The cell-spot is clearly marked in blackish on both sides of both wings. The underside is lilac-grey, with the post-median fascia marked in black, on both wings. The male genitalia are illustrated (fig. C) since the species of this genus can only be accurately differentiated by a study of the tail-parts; the aedeagus of the Cyprian species is most singular. For the male genitalia of eight other *Dyscia* species, see Albers and Warnecke (1940), *Zeit. d. Wiener Ent. Ver.*, *25*, pp. 118-122, and Warnecke (1940), *Mitt. der Muench. Ent. Ges.*, *30*, Heft. 3, pp. 1047-51. For the early stages and phenology of *D. simplicaria*, see my photo and article in *Ent. Rec.*, LIX, Pl. V, Fig. 14, and LX, p. 3.

266. *S. ericetaria syriacaria*, Stgr.
Larvae on *Poterium spinosum* and *Polygonum* in the plain in iii, hatched in vi and vii; this early emergence is perhaps due to the cooler conditions of captivity, whereby the chrysalis exceptionally skips its usual aestivation; most of them died, however, and none emerged at the right season (autumn).

268. *Itame berytaria*, Stgr.
Larvae were seen both on *Calycotome* (as previously observed in Syria, see *Ent. Rec.*, XLVII, Pl. III, Figs. 22, 23) and *Genista sphacelata*.